



# United States Department of the Interior

## FISH AND WILDLIFE SERVICE

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August 2, 1999

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1300 Airport Lane  
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Robert Willis, Chief of Environmental Resources  
U.S. Army Corps of Engineers  
Portland District  
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Subject: Biological and Conference Opinion for management of Federal lands on the north spit of Coos Bay for the remainder of the 1999 western snowy plover nesting season (1-7-99-F-358)

Dear Ms. Richardson and Mr. Willis:

This biological and conference opinion responds to your request for formal consultation and conference with the U.S. Fish and Wildlife Service (Service) pursuant to section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1536 *et seq.*) (Act). This consultation and conference addresses the effects of public access management measures on the threatened western snowy plover (*Charadrius alexandrinus nivosus*) and its proposed critical habitat. For the Bureau of Land Management (BLM), this request constitutes reinitiation of consultation regarding the Coos Bay Shorelands Management Plan (1-7-95-F-405).

This biological opinion is based on information from the following sources: the Biological Assessment for Management of Federal Lands on the North Spit of Coos Bay During the 1999 Western Snowy Plover Nesting Season, prepared by the BLM (USDI 1999); our files; and informal consultation between our staffs. A complete administrative record of this consultation is on file at our Oregon Coastal Field Office, Newport, Oregon.

## Consultation History

For the past several years, public access to the Coos Bay north spit has been managed in accordance with BLM's Coos Bay Shorelands Management Plan (USDI 1995b) and the Service's biological opinion for that plan (biological opinion 1-7-95-F-405). The Shorelands Plan, and the related terms in conditions in the biological opinion, called for closures and recreational restrictions in specified portions of western snowy plover habitat on the north spit. The majority of these closures and restrictions were in effect only during the plover nesting season (March 15 through September 15).

On February 4, 1999, the freighter *New Carissa* grounded on the Coos Bay north spit and subsequently began leaking fuel oil. Efforts to minimize the release of oil into the environment included two attempts to set the ship on fire to burn off the oil. During the second burn, the ship broke into two pieces. The bow section, which contained the majority of the remaining fuel oil, was eventually towed to sea and scuttled. The stern section remains mired in the sand within the surf zone off the Coos Bay north spit.

Immediately after the *New Carissa* began leaking oil, the Unified Command for the *New Carissa* oil spill closed public access to the Coos Bay north spit. The closure was put in place to ensure that the general public would not come in contact with the oil, a hazardous material. On March 12, 1999, the Service was notified that the BLM and the Unified Command for the *New Carissa* incident intended to reopen the spit that evening. Public access would have been managed as described in the Coos Bay Shorelands Management Plan and the associated biological opinion. The Service advised the BLM that the analysis of effects in the existing biological opinion for the Shorelands Plan, written in 1995, was no longer current given the presence of the *New Carissa* stern. We believed that the intense public interest in the *New Carissa* spill and in the remaining stern section would result in a higher level of visitation to the spit than was anticipated during consultation on the Shorelands Plan. We also believed, in light of plovers' poor reproductive success in 1998 and the significant impacts of the oil spill, that the status of plovers within the action area had changed significantly since 1995. The BLM agreed to delay reopening the spit to public access until new consultation was completed.

On March 15, 1999, the Service and the BLM met to discuss public access management in light of the current conditions. The BLM presented a proposal for allowing public access to high-interest areas while providing increased protection for plovers. The BLM also volunteered to coordinate preparation of a biological assessment for the proposal in coordination with the U.S. Army Corps of Engineers (Corps), the other federal land owner on the north spit. Further, the BLM agreed to keep the spit closed to public access until consultation on the proposal was completed.

On June 18, 1999, we received your request for formal consultation and conference, dated June 7, 1999, and the biological assessment for management of BLM and Corps lands on the north spit. The biological assessment addressed effects to plover habitats on the ocean beach and in the restored habitat on the spit referred to as "inland snowy plover habitat area". In a letter dated June 30, 1999, and received on July 2, 1999, the BLM and the Corps amended the biological

assessment to include additional management measures for one of the bayside beaches on the north spit.

The biological assessment, as amended, addresses effects of the proposed access management measures to western snowy plovers and their proposed critical habitat. As indicated in the biological assessment, the BLM and the Corps also evaluated the potential for effects to peregrine falcons (*Falco peregrinus*), brown pelicans (*Pelecanus occidentalis*), and bald eagles (*Haliaeetus leucocephalus*), and concluded that these species would not be affected by the proposed action.

## **BIOLOGICAL AND CONFERENCE OPINION**

### **DESCRIPTION OF PROPOSED ACTION**

The proposed action is described in detail in the biological assessment for this project, as amended, which is incorporated by reference. The following is a summary of the proposed action as described by the biological assessment:

Currently all plover habitat areas on the Coos Bay north spit, and most of the area surrounding plover habitat on the spit, are closed to public access. The action proposed by BLM and the Corps is to open portions of the spit to the public for recreational use for the remainder of this year's nesting season. No decisions have been made yet about how public access will be managed next year. The BLM and Corps will not open specified areas of plover habitat to public access, and will restrict the recreational activities allowed adjacent to the areas that will remain closed. These closures and restrictions will remain in effect until the end of the plover nesting season (September 15, 1999). The plover habitat areas that will remain closed and the recreational restrictions are as follows:

- The BLM and the Corps will not allow public access to the beach between the Federal Aviation Administration (FAA) tower and a point 100 yards north of the Coos Bay north jetty.
- The BLM and the Corps will not allow public access to the upper portion of the beach (above the high tide line) between the FAA tower and northern limit of BLM ownership. In three areas, well defined access points will be provided across the upper beach to enable visitors to reach the lower beach.
- Only non-vehicular recreational access will be allowed on the lower beach (below the high tide line) between the FAA tower and the northern limit of BLM ownership. Similarly, only non-vehicular recreational access will be allowed on the 100-yard long segment of beach north of the jetty that will be opened for recreational use.
- The BLM and the Corps will not allow public access to the inland snowy plover habitat area, as mapped in the biological assessment.
- Public use of ATVs will not be allowed on the BLM and Corps lands on the north spit.

- If plovers are found nesting or rearing chicks on the southernmost bayside beach, the beach will be closed to recreational activity.

The inland plover habitat area, which will remain closed, includes a 0.9 mile segment of foredune road. In previous years, this foredune road provided the only vehicle access to the jetty and the beach at the southern end of the spit. This year, an alternate route will be provided by clearing a road around the eastern side of the inland plover area, then west to the jetty. This road will be cleared and maintained to the same standard as the foredune road; it will not be improved or maintained in a manner that would encourage use by two-wheel drive street legal vehicles or by four-wheel drive vehicles not suited for deep and loose sand.

Currently, a local dune buggy concessionaire is conducting highly controlled tours to view the *New Carissa* stern. The tour route is entirely outside of plover habitat, and tour patrons have been instructed to remain at the viewing areas. However, once the lower portion of the beach north of the FAA tower is opened to the public, tour patrons would be able to access the lower beach through one of the three access points across the closed upper beach.

Several measures are proposed to promote compliance with the habitat closures and recreational restrictions. The boundaries between closed and open areas will be marked with rope and post fences, signs, sand berms, and vehicle barriers. The area will be patrolled by law enforcement officers at least 40 hours per week, and compliance monitoring will occur at least two days per week. The BLM and the Corps will also place interpretive signs and conduct other outreach activities to educate visitors about the plover protection measures and encourage compliance. These measures will be implemented through the remainder of the 1999 plover nesting season.

It is the BLM's and Corps' expectation that these measures will allow public access to popular and traditional use areas while providing protection to plovers and their habitats. However, levels of recreational use and compliance with plover protection measures can not be predicted with certainty. Therefore, the BLM and the Corps have established very specific thresholds of impact which, if met, will trigger reevaluation of the access management plan. These thresholds are described in detail in the biological assessment and are summarized below:

- destruction of a plover nest by illegal vehicle use on the beach or within the inland plover habitat areas;
- destruction of a plover nest as a result of authorized recreational use of the beach;
- destruction of a plover nest as a result of unauthorized entry into the inland plover habitat area;
- tampering with, removal, or destruction of a nest enclosure; or
- one or more incidents where a violation of the habitat closures results in the effective exclusion of plover nesting activity, as determined by the combined opinion of state and

federal biologists, and the Oregon Natural Heritage Program biologists monitoring plover nesting on the north spit.

Separate from the public access management elements of the proposal, the BLM also proposes to implement one of the phases of an ongoing restoration project. The objective of the project is to clear vegetation from a portion of the 1998 Habitat Restoration Area (HRA) to restore plover habitat. Woody vegetation has already been cleared and now rests in large brush piles on the site. The BLM plans to burn these piles after the 1999 nesting season. In preparation for this burn, the BLM proposes to enter the HRA this August to cover the brush piles with black plastic. The BLM will coordinate this activity with the biologists monitoring plover nesting on the north spit, and modify or delay the work if necessary to avoid harming plovers and their broods.

## **STATUS OF THE SPECIES**

### Western snowy plover:

The Pacific coast population of the western snowy plover was federally listed as threatened on March 5, 1993 (USDI 1993). Primary threats that warranted listing included loss and modification of habitat resulting from European beach grass encroachment and urban development, extensive human recreational activity in plover habitat, and predation exacerbated by human disturbance. On March 2, 1995, the Service published a proposal to designate critical habitat for the listed population (USDI 1995a). A Recovery Plan for the Pacific coast population of the western snowy plover is currently being developed.

The western snowy plover occurs along the Pacific coast from southern Washington to southern Baja California, Mexico, in the interior areas of Oregon and California, and in Nevada, Utah, New Mexico, Colorado, Kansas, Oklahoma, north-central Texas, south-coastal Texas, and possibly extreme northeastern Mexico (American Ornithologists' Union 1957). The Pacific coast population of the western snowy plover consists of those individuals that nest near Pacific tidal waters and includes all western snowy plovers nesting on the mainland coast, peninsulas, offshore islands, and around coastal bays and estuaries. Breeding is virtually completely segregated between the coastal and interior populations, and the Pacific coast population has been determined to comprise a distinct population segment of this subspecies (USDI 1993). Throughout this document, "plover" refers to the listed, Pacific coast population.

Western snowy plovers depend on open sandy or saline habitats adjacent to coastal waters. Wind, storms, tides, wave action, and colonization by native plants are important natural factors influencing this dynamic habitat. Western snowy plovers forage on invertebrates in the intertidal zone, wrack line, dry sandy areas above the high tide line, sparsely vegetated dunes, salt pans, and the edges of salt marshes. Reported prey items include polychaetes, sand crabs, brine fly larvae, sand hoppers, beetles, flies, and caterpillars.

The breeding season generally begins in mid-February or March, although courtship behavior has been observed as early as late January (Persons 1999). In the northern portions of the range nesting activity generally doesn't begin until mid- to late March. Preferred nesting habitats include unvegetated or moderately vegetated dune backed beaches, river mouths, sand spits,

beach strands, and open areas around estuaries. Other less common nesting habitats include salt pans, dredge spoils, dry salt ponds, and salt pond levees (USDI 1995a). Nests consist of a shallow scrape or depression and are sometimes lined or ringed with mollusc shell fragments, bits of dead vegetation, and other small debris. Nests sites are typically in flat, open areas with sandy or saline substrates; vegetation and driftwood are usually dispersed or absent. Site fidelity has been observed across breeding seasons (Warriner *et al.* 1986). The first nests are usually initiated in early to mid-March and the final nests are initiated in mid to late July. Clutches typically consist of three highly cryptic eggs, although two egg nests are not uncommon, and are laid over a period of about 4 to 5 days (Page *et al.* 1977). Sustained incubation begins upon completion of the clutch and continues until hatching at 25 to 31 days. The female incubates most of the day and the male most of the night (Warriner *et al.* 1986). Incubating adults sensing a predator or threat usually run away from the nest while engaging in distraction displays. If the clutch is destroyed before hatching, the pair typically lays a replacement clutch.

Western snowy plover chicks are highly cryptic and precocial, leaving the nest within hours after hatching. Both parents tend the chicks initially, leading them to suitable foraging areas, providing thermal cover, and protecting them from predators and other threats through alarm calls and distraction displays. However, within a few days of hatching, the female usually leaves the brood, establishes a pair with another male, and initiates a new nest. The male remains with the chicks until they fledge, generally in 28 to 32 days (Warriner *et al.* 1986). During this time, broods and the attending male usually move away from the nesting territory; movement of up to 6.4 kilometers from the natal area has been reported (Washington Department of Fish and Wildlife 1995).

The coastal western snowy plover population includes both resident and migratory individuals. Migratory birds may move to wintering sites north or south of their nesting area, but most tend to move to areas south of Bodega Bay, California (Page *et al.* 1986). Individuals from the interior population also migrate to the coast for the winter, thus a wintering area may support birds from both the coastal and interior populations. Wintering plovers are usually found roosting in flocks ranging in size from a few individuals to a few hundred birds.

Warriner *et al.* (1986) provide one of the most detailed studies of western snowy plovers' serially polygamous mating system. They suggest that males have a slightly higher survival rate than females, estimate the male to female sex ratio to be 1.41:1, and discuss the possibility that female serial polyandry may be a response to this skewed sex ratio. Local hatching success rates (percentage of nests in a study area hatching at least one egg) have been reported to range from 0 to 80 percent (USDI 1993). Reported estimates of local reproductive success (young fledged per female or per male within a study area) vary from 0 to 2.40 (USDI 1993). While the use of different methods for estimating reproductive success may account for some of this variability, the range of these estimates is most likely due to differences in beach management, recreational pressure, predation pressure, and localized natural events such as high tides coinciding with heavy surf.

Historic records indicate that nesting western snowy plovers were once more widely distributed than they are currently. In California, 53 general nesting areas were known prior to 1970 (Page

and Stenzel 1981); as of 1991, no evidence of breeding birds had been found at 33 of those 53 areas (Page *et al.* 1991). Nineteen nesting areas were reported in Oregon in 1974 (Oregon Coastal Conservation and Development Commission 1974); only seven of those areas were used in 1998 (Castelein *et al.* 1998). In Washington, two of the five historical nesting sites are still used (Washington Department of Fish and Wildlife 1995). Twenty eight nesting areas were identified in Mexico in 1991 (USDI 1993). The western snowy plover breeding population in California, Oregon, and Washington is estimated to have declined by 17 percent, from about 2300 to 1900 adults, between 1977 and 1989 (Page *et al.* 1991).

The most recent published estimates of the size and distribution of the western snowy plover breeding population have been developed by the Point Reyes Bird Observatory (PRBO) (Nur *et al.* 1999). Working with the Western Snowy Plover Recovery Team, PRBO arrived at the following estimates of breeding population size and distribution across six subpopulations:

<u>Breeding Population Size</u>	<u>Subpopulation</u>
134	Oregon and Washington
50	northern California (Del Norte through Mendocino Counties)
264	San Francisco Bay
300	central California (Sonoma through Monterey Counties excluding San Francisco Bay)
886	lower central California (San Luis Obispo through Ventura Counties)
316	southern California (Los Angeles through San Diego Counties)
1,950	total

These population estimates were developed using the most comprehensive data available for each subpopulation. The Oregon and Washington, central California, and southern California subpopulation estimates are based on data from intensive monitoring of color-banded individuals during the 1997 season. The other subpopulation estimates are based on the most recent window surveys (counting birds throughout subpopulation area within a specific and limited temporal window).

Monitoring data for the 1998 nesting season have not been analyzed comprehensively across all subpopulations. However, some site specific reports for the 1998 season and early results from the 1999 season are showing startling declines in some areas. For example, prior to 1998, Vandenberg Air Force Base in California supported around 220 to 250 breeding plovers. Only 130 breeders were counted in 1998 and less than 70 breeders were counted during the early months of the 1999 season (Persons 1999). In Oregon, the 1998 breeding population was estimated at 97, down from 141 in 1997 (Castelein *et al.* 1998). Early observations from the 1999 season indicate that the number of adults breeding in Oregon have declined further, but quantitative estimates are not yet available (Stern 1999). Although the causes of these declines are not specifically known, the preceding severe winter in California, lower marine productivity associated with the El Nino Southern Oscillation, the cumulative effects of several recent oil

spills, and the cumulative effects of lower productivity in some portions of the range in recent years may all play a role.

Conservation efforts appear to have benefitted the western snowy plover in portions of its range. For example, coordinated monitoring, nest protection, habitat restoration, and recreation management efforts along the Oregon coast coincided with an increase from 30 adult birds counted during the 1992 nesting season census to 109 birds counted in the 1996 census (ODFW, unpublished data.) However, few habitat areas are managed for plover conservation and recovery, many areas are managed primarily for human recreation and secondarily to minimize impacts to plovers, and many more areas are not managed for plovers at all. Additionally, even in areas that receive some degree of plover management, the varying effectiveness of those management measures combined with other influences can result in severe impacts to the plovers using those sites. For example, during the 1997 nesting season at Vandenberg Air Force Base in Santa Barbara County, California, unusually high nest predation rates (50 percent), attributed largely to the predator-attracting waste left by surf fishermen, contributed to the lowest hatch rate (19 percent) ever observed at that location (Persons and Applegate 1997).

Population estimates and loss of nesting areas indicate a clear downward trend. A population viability analysis model (PVA), constructed to support development of a Recovery Plan for this species, also indicates that the western snowy plover is still threatened (Nur *et al.* 1999). When run using estimates of current conditions, the PVA predicts that the population, on average, will decline at 0.92 percent per year representing a cumulative 69 percent decrease over 100 years. The PVA also indicates that reproductive success is one of the more sensitive demographic parameters; that is, increases in productivity are likely to be key to conservation and recovery, while continued or additional negative impacts to productivity could have grave consequences for the population. In order to simulate the potential effects of oil spills, anomalously severe winters, and other infrequent but large scale impacts, the PVA was run with rare but catastrophic losses of adults incorporated into the model. This scenario predicted a 99 percent probability that the population would decrease by at least 50 percent after 100 years. In summary, the coastal population of the western snowy plover is on a downward trajectory and remains vulnerable to catastrophic events. Conservation and recovery of this species will require management to improve reproductive success and successful mitigation of impacts to fecundity and adult survival.

The status of western snowy plovers in Mexico and the influence of these birds on overall population trends is not well understood. In the absence of data regarding productivity, survivorship, immigration, emigration, and the contribution of these birds to the listed population is difficult to estimate. Similarly, without information regarding conservation measures or threats to habitats in Mexico, we are unable to predict the likely influence this area may have on the recovery or decline of this species.

#### Proposed critical habitat for the western snowy plover:

In 1995, 28 plover breeding sites were known along the Pacific coast of the United States. In view of the limited number of sites known to support breeding plovers, and the other declines in



habitat and plover numbers discussed above, the Service developed a proposal for designation of critical habitat for this species. This proposal was published on March 5, 1995 (USDI 1995a). The proposal identified 28 critical habitat areas totaling about 20,000 acres and 210 miles of coastline. Nineteen of these areas are in California, seven are in Oregon, and two are in Washington. In the ten years preceding development of the proposal, these sites had provided habitat for about 65 percent of nesting and 60 percent of wintering plovers in California, 95 percent of nesting and wintering plovers in Oregon, and 100 percent of nesting and 90 percent of wintering plovers in Washington. A variety of factors were considered in selection of the sites proposed for critical habitat designation. These factors included the contribution each site could make toward recovery of the species, the need for special management considerations, and the presence of physical and biological attributes essential to conservation of the plover. The physical and biological attributes identified in the Service's proposal include:

- Space for individual and population growth;
- Food, water, air, light, minerals, and other nutritional or physiological requirements;
- Roost sites;
- Sites for breeding, reproduction, and rearing of offspring;
- Habitats (nesting grounds and feeding sites) that are protected from disturbance and are representative of the historic geographical and ecological distribution of the species (USDI 1995a).

The proposal also identified the primary constituent elements of plover critical habitat as: beaches, dunes, and estuaries that provide habitat, or with rehabilitation could provide habitat, for nesting, roosting, foraging, and migration. Other key attributes identified in the proposal include the presence of nesting, brood rearing, foraging, and wintering habitats that are protected from disturbance.

## ENVIRONMENTAL BASELINE

Regulations implementing section 7 of the Act (50 CFR 402.02) define the environmental baseline as the past and present impacts of all Federal, State, or private actions and other human activities in the action area. Also included in the environmental baseline are the anticipated impacts of all proposed Federal projects in the action area which have undergone section 7 consultation, and the impacts of state and private actions which are contemporaneous with the consultation in progress.

The action area is defined at 50 CFR 402 to mean "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." For the purposes of this consultation, the Service considers the action area to include all plover habitat on the Coos Bay north spit south of the boundary between BLM and Forest Service lands.

Recent consultations affecting this action area include formal consultation regarding the removal of the *New Carissa* stern, and informal consultation regarding emergency restoration actions for the plover. The Service and the Corps completed consultation on removal of the *New Carissa* stern on July 22, 1999 (biological opinion number 1-7-99-F-381). The Service concluded that the stern removal project would not jeopardize the continued existence of the plover, and would not destroy or adversely modify its proposed critical habitat. Some take of plovers has been

anticipated; however, given the measures that will be implemented to minimize adverse impacts during stern removal, we expect the take to be minimal. The Service and the BLM completed informal consultation regarding emergency restoration actions for the plover on July 8, 1999 (informal consultation number 1-7-99-I-382). These actions were developed to begin to compensate for some of the impacts to plovers from the *New Carissa* oil spill. The Service and the BLM concurred that the emergency restoration actions may affect, but are not likely to adversely affect, the plover. Our agencies also concurred that the emergency restoration actions would not affect the plovers' proposed critical habitat. During the early phases of the response to the *New Carissa* oil spill, the Service provided the Coast Guard with information and recommendations regarding effects to plovers through emergency consultation. The Service has encouraged the Coast Guard to initiate formal consultation in order to formalize the input provided during emergency consultation and to address continued response activities. The Coast Guard has not initiated formal consultation at this time.

As this biological opinion and conference report is being finalized, a wide-spread tarball event is affecting Oregon's central coast, including the nearshore waters and beaches in the action area. So far, this event is not believed to be tied to the *New Carissa* incident or the remaining *New Carissa* stern section. Based on the information received by the Service thus far, we expect that this oil will be cleaned up and that efforts will be made to minimize the impacts of cleanup activities. As a result, at this time, we do not anticipate that this event will significantly change the status of the plover as summarized below.

#### Western snowy plover:

Plover habitat on the Coos Bay north spit is located on the beach, in the area owned by the Corps of Engineers and referred to as the south spoil, and in the Habitat Restoration Areas (HRA) restored and maintained for plovers by the BLM. The south spoil and the HRAs comprise the inland plover habitat area referred to in the biological assessment and the description of the proposed action. Reproductive activity occurs throughout the south spoil and all but the most recently created HRAs. On the beach, nesting has occurred within 2.5 miles of the jetty in recent years (Castelein *et al.* 1998, Castelein *et al.* 1997, Estelle *et al.* 1997, Hallet *et al.* 1995, Hallet *et al.* 1994, Casler *et al.* 1993, Craig *et al.* 1992, Stern *et al.* 1991). However, in 1990, one nest was found on the beach more than four miles from the jetty (Stern *et al.* 1990). Brood rearing on the beach also appears to have been concentrated within 2.5 miles of the jetty, but detailed mapping of brood movements is only available for the 1998 season (Castelein *et al.* 1998).

Collectively, these habitats on the Coos Bay north spit have been key nesting and brood rearing areas within Oregon. Productivity data collected by the Oregon Natural Heritage Program (ONHP) since 1990 show that, with the exception of the 1998 nesting season, the Coos Bay north spit has produced at least 37 percent of the plovers fledged each year in Oregon (Castelein *et al.* 1998). The number of young fledged from the north spit over these nesting seasons ranges from three in 1990 to 30 in 1994 (Castelein *et al.* 1998). The number of nests initiated at the north spit during these years ranges from 9 in 1993 to 23 in 1997 (Castelein *et al.* 1998, Castelein *et al.* 1997, Estelle *et al.* 1997, Hallet *et al.* 1995, Hallet *et al.* 1994, Casler *et al.* 1993, Craig *et al.* 1992, Stern *et al.* 1991, Stern *et al.* 1990).

The Coos Bay north spit has not been a major wintering area for plovers. Winter surveys conducted since 1991 had not detected winter use of the spit through the winter of 1998. However, during the 1999 winter survey, seven birds were observed using the beach (Oregon Department of Fish and Wildlife, unpublished data). Plovers were also observed using the beach on the bay side of the southern tip of the spit during the early months of the *New Carissa* incident.

The 1998 nesting season was marked by a reduced number of breeding adults throughout Oregon, compared to recent years. The 1998 Oregon breeding population was 30 percent lower than the 1997 breeding population (Castelein *et al.* 1998). Hatching and fledging rates remained similar to 1998 levels, but the reduced number of breeding adults translated into a decline in the number of nest attempts and the lowest number of young fledged since 1992. At the north spit, only 18 nests were initiated during the 1998 season, compared to 23 the previous year, and only 9 young were fledged, compared to 16 in 1997 (Castelein *et al.* 1998, Castelein *et al.* 1997).

On the heels of Oregon's least productive nesting season since 1992, Oregon's plovers have been subjected to the ongoing effects of the *New Carissa* oil spill. An estimated 51 plovers have been observed with some degree of external oiling. Seventeen of these plovers were captured, cleaned, and released after rehabilitation. Several plovers have been oiled repeatedly, including at least 7 of the rehabilitated birds. There has been one confirmed plover mortality; this particular bird had been oiled on at least three separate occasions. Oil, often in the form of sticky tarballs, has been seen at all plover habitat areas between the Coos Bay north spit and Heceta Head. This area encompasses six of the eight nesting areas in Oregon used in recent years. In addition to the direct impacts of oil to plovers, their habitats, and their food sources, cleanup operations and other response activities have resulted in repeated and often intense disturbance throughout this event. Although the geographic extent and intensity of oiling and response activities has decreased since late March, these types of direct impacts continue to occur.

Quantitative data describing the degree of oiling and intensity of response activities specifically for the north spit are not available. Similarly, we have not analyzed survey data to the extent that we can quantitatively describe the immediate effects to those plovers that use the spit for wintering or nesting. However, our observations and anecdotal information clearly indicate that the plovers using the north spit, and the plover habitats on the spit, have been among those most seriously impacted by the spill. While it is too early to quantitatively assess the effects of the spill on those plovers that use the north spit, we do know that plovers have been using the north spit habitats this nesting season, and that at least four fledglings have been produced thus far (ONHP, unpublished data). The long term effects to plovers will be determined through Natural Resource Damage Assessment studies.

#### Proposed critical habitat for the western snowy plover:

Proposed critical habitat unit OR-6 extends from Horsefall Beach to the Coos Bay north jetty, and includes the ocean beach, the southernmost bayside beach, the south spoil, and some of the HRAs (USDI 1995a). All of the plover habitat within the action area falls within this proposed critical habitat unit. Plover use of these areas is described above. The Coos Bay north spit was included

in the critical habitat proposal because it contains key physical and biological attributes, and encompasses all of the primary constituent elements of critical habitat as described in the proposed rule and enumerated earlier. This area was also proposed for critical habitat designation due to its importance to the plover and the need for special management considerations for these habitats. European beachgrass and recreation are two of the primary threats to the habitat within OR-6.

The plover habitats in OR-6 have received the brunt of the *New Carissa* oil spill. The greatest impact has been to the roosting, foraging, nesting, and brood rearing habitat on the beach. Early in the incident, extensive areas of oiled beach and the corresponding intense cleanup effort eliminated the foraging and roosting values of this habitat. These values appear to be returning to the beach as a result of cleanup, a reduction in the size and frequency of tarball incidents, and natural beach accretion. Nesting and brood rearing functions have also been diminished by continued tarball events, monitoring, and cleanup activities; although plovers continue to nest and rear young on the beach this nesting season.

The current closure of the north spit to public access has virtually eliminated recreational disturbance within this portion of OR-6. The absence of such disturbance is expected to have significantly increased the nesting, brood rearing, and foraging functions of these habitats. Although some disturbance associated with oil spill response activities is present, this type of disturbance does not appear to be nearly as intense as that associated with recreation, and response personnel have been provided with guidelines to minimize their adverse impacts to plovers and their habitats.

## **EFFECTS OF THE ACTION**

### Western snowy plover:

As discussed in the Description of the Proposed Action, the BLM and the Corps propose to maintain the existing closures of plover nesting areas. Compliance with the public access management measures will result in recreational activity adjacent to nesting habitat and within potential foraging and brood rearing habitat. Lack of compliance could result in recreational activity within nesting habitat as well.

Recreational activity within and adjacent to plover nesting and brood rearing habitat can have significant adverse impacts to plovers, their nests and chicks, and overall productivity. Walking, picnicking, beach combing, and other common recreational activities can crush plovers' highly cryptic nests and chicks. Vehicles in or near plover nesting areas can also crush nests and chicks, and in some cases, may inhibit brood movement to foraging areas. Corvids and gulls, major plover predators, key in to human activity and are attracted to the beach by recreationists. Deliberate feeding of gulls, crows, and ravens as well as leaving food scraps, trash, and fish waste, can attract large numbers of these predators into plover habitat. Unleashed dogs frequently chase shorebirds, including plovers, and often wander into plover nesting areas. Recreation is also a source of disturbance that can harass adults and chicks. Harassment of incubating plovers can result in nest abandonment, burial of eggs by blowing sand, nest predation, and death of embryos from exposure to extreme cold or heat. Such harassment can also cause or contribute to chick

mortality by interfering with essential chick rearing behaviors or by causing intolerable stresses directly to the chicks. For example, disturbance that interferes with adult brooding behaviors could subject chicks to lethal exposure to wind and cold temperatures, and disturbance that interferes with foraging could result in starvation of chicks.

In one of the few attempts to measure the effects of recreational activity on plovers and the efficacy of the "share the beach" approach to plover conservation, Persons (1998) compared the reproductive success from a beach that is completely closed to recreational activity to that from a beach that is managed for recreation and plovers. He found that over a three year period, fledging success at the beach which was completely closed to recreation was 35 to 40 percent compared to 24 to 25 percent at the beach managed for both recreation and plovers. In the only year in which banding was used to measure productivity, fledging success at the closed beach was 71 percent while the "shared" beach had a success rate of only 27 percent.

The BLM and Corps proposal includes several elements that should limit these types of adverse impacts to plovers. Key among these are: retaining the closure of all the currently used nesting areas and nearly all of the adjacent beach; the inclusion of 0.9 miles of the foredune road in this closure; implementation of a "share the beach" approach over only a portion of beach; and, a significant law enforcement and compliance monitoring effort. In the unfortunate event that lack of compliance adversely affects plovers to the extent that specific triggers are met, the BLM and Corps have committed to reevaluate management of public access and plover protection on the spit.

Implementation of this proposal will require some level of agency activity within and adjacent to the closed and restricted areas. Law enforcement, compliance monitoring, maintaining signs and fences, and other on-site management actions pose some level of risk to plovers, their nests, and their chicks. However, the BLM and the Corps have included measures to minimize these risks. These measures include using vehicles on the beach only when necessary to accomplish the task at hand, directing personnel using vehicles to drive slowly and as close to the water as is safe, and providing timely information to personnel working on-site regarding the numbers and locations of broods and nests. The proposed restoration activity also entails some risk of disturbance to plovers and broods. However, the BLM will minimize the risk of disturbance by covering the brush piles with plastic only when disturbance is least likely to result. This determination will be made in close coordination with the biologists monitoring plover nesting activity on the spit.

#### Proposed critical habitat for the western snowy plover:

The physical and biological features and primary constituent elements of unit OR-6 that could be affected by opening the spit to public access are the beaches and inland plover area that provide habitat that is currently protected from recreational disturbance. As discussed above, the BLM and Corps have designed this public access management approach to provide continued protection to nearly all of the habitat on the spit, and to minimize the risks of disturbance occurring through non-compliance. Further, if the plan fails to protect this portion of OR-6 from disturbance to the extent that impacts reach a specified threshold, the BLM and the Corps have committed to reevaluate this public access management strategy. As a result, public access may

have some adverse effects to critical habitat, but we anticipate that these impacts will be relatively minor.

## **CUMULATIVE EFFECTS**

Cumulative effects include the effects of future State, tribal, local, or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act.

The habitats within the action area are owned or managed by the BLM, the Corps, ODFW, the Oregon Division of State Lands (DSL), and the Oregon Parks and Recreation Department (OPRD). ODFW manages those portions of the Corps land that provide habitat for plovers. This arrangement is formalized by a management agreement between those two agencies. Both the Corps and ODFW management objectives are conservation of plovers and their habitats. Any future actions proposed for Corps land will undergo separate consultation and are not considered here. OPRD retains jurisdiction over the beach within the action area. This area, referred to as the Ocean Shore, is managed for recreation and conservation of biological values. BLM, the Corps, ODFW, and OPRD have worked cooperatively to provide compatible management of the Ocean Shore and the dunes. We are unaware of any specific projects being planned for the Ocean Shore nor do we anticipate changes in management objectives for this area. DSL owns the submerged lands below low tide. We are unaware of any projects proposed for this area.

## **CONCLUSION**

After reviewing the current status of the plover, the environmental baseline for the action area, the effects of the proposed action and cumulative effects, it is the Service biological opinion that the proposed action is not likely to jeopardize the continued existence of the western snowy plover. It is the Service's conference opinion that the proposed action is not likely to destroy or adversely modify proposed western snowy plover critical habitat.

The Service's conclusions are based on the following:

1. The BLM and the Corps will not open public access to most of the plover habitat on the spit, including the 0.9 mile segment of foredune road between the inland plover habitat and the beach; and
2. The BLM and the Corps will implement several measures, including intensive law enforcement and compliance monitoring, to ensure compliance with the closures that will remain.

## **INCIDENTAL TAKE STATEMENT**

Section 9 of the Act and Federal regulation pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as

to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct. Harm is further defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns including breeding, feeding, or sheltering. Harass is defined as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

The measures described below are non-discretionary, and must be undertaken by the BLM and the Corps for the exemption in section 7(o)(2) to apply. The BLM and the Corps have a continuing duty to regulate the activity covered by this incidental take statement. If the BLM and the Corps fail to assume and implement the terms and conditions, the protective coverage of section 7(o)(2) may lapse. In order to monitor the impact of incidental take, the BLM and the Corps must report the progress of the action and its impact on the species to the Service as specified in the incidental take statement [50 CFR 402.14(i)(3)].

#### **AMOUNT OR EXTENT OF TAKE**

1. The Service anticipates take of one (1) plover nest in the form of direct mortality through crushing, vandalism to the nest, removal of eggs, intense disturbance that causes abandonment, or other actions which cause the loss of a nest.
2. The Service anticipates take of one (1) plover chick in the form of direct mortality through crushing by foot or vehicle.
3. The Service anticipates take of one (1) pair of nesting adults in the form of harassment through vandalism to the enclosure, disturbance from sustained recreational activity next to a nest, or other actions which cause harassment of nesting adults.
4. The Service anticipates an unquantifiable amount of take in the form of harassment of plovers and their broods as a result of recreational activities.

We base this anticipated amount of take on:

- a. those portions of the proposed action that should limit the impacts of allowing recreation adjacent to nesting habitat and within foraging and brood rearing habitat; and
- b. that portion of the proposed action that ensures timely reevaluation of recreation management and plover protection strategies if impacts reach specified thresholds.

The Service will not refer the incidental take of any migratory bird covered under this take statement for prosecution under the Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-712), if such take is in compliance with the terms and conditions (including amount and/or number) specified herein.

### **EFFECT OF THE TAKE**

In the accompanying biological opinion, the Service determined that this level of anticipated take is not likely to result in jeopardy to this species.

### **REASONABLE AND PRUDENT MEASURES**

The Service believes the following reasonable and prudent measure is necessary and appropriate to minimize take of western snowy plovers:

1. Monitor and report on the success of the recreation management and plover protection measures.

### **TERMS AND CONDITIONS**

In order to be exempt from the prohibitions of section 9 of the Act, the BLM and the Corps must comply with the following terms and conditions. These terms and conditions implement the reasonable and prudent measures described above, and outline monitoring and reporting requirements. These terms and conditions are non-discretionary.

The following terms and conditions are established to implement the reasonable and prudent measure.

1. The BLM and the Corps shall provide an end-of-season report to the Service summarizing the results of the law enforcement and compliance monitoring effort. This report shall be provided to the Service's Oregon Coastal Field Office, 2127 SE OSU Drive, Newport, Oregon, 97365, by November 30, 1999. The report shall contain:
  - a. a summary of the hours spent monitoring compliance;
  - b. the number and types of violations observed;
  - c. a summary of the hours spent by law enforcement officers patrolling the action area;
  - d. the number and nature of citations and warnings issues; and
  - e. any recommendations for improving visitor compliance.
2. The BLM and the Corps shall immediately notify the Service upon meeting any of the thresholds for reevaluation of public access management described in the biological



assessment. Notification shall include a description of the incident, the date the incident took place, and any immediate actions taken in response to the incident. This notification shall be provided to the Oregon Coastal Field Office by phone [541-867-4550], fax [541-867-4551], or electronic mail [carrie.phillips@hmsc.orst.edu].

Nothing in this incidental take statement should be construed as conferring an exception to the section 9 (of the Act) prohibition against take of plovers on anyone that is not an employee or agent of BLM or the Corps, or an employee of a law enforcement agency that is involved with BLM or the Corps in enforcement activities as described in this biological opinion. Private individuals involved in activities that result in take of plovers as defined under the Act or Migratory Bird Treaty Act of 1918, as amended (16 U.S.C. 703-712) shall remain subject to the full range of enforcement and prosecution actions envisioned in these statutes.

If a dead, injured, or sick endangered or threatened species is located, including crushed or vandalized nests, initial notification must be made to Fish and Wildlife Service, Division of Law Enforcement, 9025 S.W. Hillman Court, Suite 3134, Wilsonville, Oregon 97070; phone: (503) 682-6171. Subsequent notification should also be made to the Service's Oregon Coastal Field Office, 2127 S.E. OSU Drive, Newport, Oregon, 97365; phone (541) 867-4550. Care should be taken in handling sick or injured specimens to ensure effective treatment or the handling of dead specimens to preserve biological material in the best possible state for later analysis of cause of death. In conjunction with the care of sick or injured endangered and threatened species or preservation of biological materials from a dead animal, the finder has the responsibility to carry out instructions provided by law Enforcement to ensure that evidence intrinsic to the specimen is not unnecessarily disturbed.

The reasonable and prudent measures, with their implementing terms and conditions, are designed to minimize incidental take that might otherwise result from the proposed action. If, during the course of the action, this minimized level of incidental take is exceeded, such incidental take would represent new information requiring review of the reasonable and prudent measures provided. The BLM and the Corps must immediately provide an explanation of the causes of the taking and review with the Service the need for possible modification of the reasonable and prudent measures.

## **CONSERVATION RECOMMENDATIONS**

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of listed species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on a listed species or critical habitat, to help implement recovery plans, or to develop information. The Service recommends that the following conservation measures be implemented:

1. The current proposal for public access management provides some of the most extensive protection of plover habitat in Oregon. If this approach is successful during the remainder of the 1999 season, we recommend continuing with this level of protection in future years.

2. The BLM and the Corps should consider prohibiting dogs from the areas of beach that will be opened for recreational access.
3. The BLM has been an important contributor to the Oregon Natural Heritage Program's study of plover reproductive success in Oregon. The BLM should continue to support this study in future years.
4. The BLM and the Corps have also been important participants and leaders in the Oregon Western Snowy Plover Working Group and on the Service's Western Snowy Plover Recovery Team. We encourage BLM and the Corps to maintain current levels of participation in these plover conservation efforts.
5. Corvid predation is a significant influence on plover reproductive success and also impacts the marbled murrelet, another coastal listed species with important habitat on BLM lands. Although research in other regions and local anecdotal information indicates that human activities influence corvid populations and predation patterns, reliable information specific to Oregon's coastal forests and beaches is lacking. We encourage the BLM to initiate a study on corvid populations and predation patterns in coastal habitats managed by the BLM, and to develop partnerships with other agencies and scientists to address this issue throughout Oregon's coastal region.
6. Exotic small mammals, such as red fox and feral cats, are also known to prey on western snowy plovers. A small, experimental mammalian predator control project is underway on the New River spit this season. We recommend that the BLM and the Corps conduct a similar project to assess the costs and effectiveness of exotic predator control on the north spit.

In order for the Service to be kept informed of actions minimizing or avoiding adverse effects or benefitting listed species or their habitats, the Service request notification of the implementation of any conservation recommendations.

### **REINITIATION NOTICE**

This concludes formal consultation and conference on managing public access on the Coos Bay north spit for the remainder of the 1999 plover nesting season. As provided in 50 CFR 402.16, reinitiation of formal consultation is required where Federal agency involvement or control over an action has been authorized by law and if (1) the amount or extent of incidental take is exceeded; (2) if new information reveals effects of this action that may affect listed species or critical habitat in a manner or to an extent not considered in this biological opinion; (3) if the action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this biological opinion; or (4) if a new species is listed or new critical habitat designated that may be affected by the action. In instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation. If consultation is reinitiated for any of the above reasons, the BLM and the Corps shall not make any irreversible or irretrievable commitment of resources which has the effect of foreclosing the formulation of reasonable and prudent alternatives.

You may ask the Service to confirm the conference report as a biological opinion issued through formal consultation if the proposed western snowy plover critical habitat is formally designated. The request must be in writing. If the Service reviews the proposed action and finds that there have been no significant changes in the action as planned or in the information used during the conference, the Service will confirm the conference opinion as the biological opinion on the project and no further section 7 consultation will be necessary.

If you have any questions regarding this opinion, please contact Carrie Phillips at the Oregon Coastal Field Office, (541)-867-4550.

Sincerely,

State Supervisor

cc: DOI Solicitor's Office, Portland; Attn: Marianne King  
BLM, Coos Bay; Attn: Kevin Kritz  
U.S. Coast Guard, Portland; Attn: LCDR Ed Parsons  
SOFO, Roseburg; Attn: Craig Tuss  
OCFO, Newport; Attn: Carrie Phillips

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